Brief Communication

Yellow palms and soles: A rare skin manifestation in diabetes mellitus

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ABSTRACT

Carotenemia with its yellowish-red tint is found in diabetes. The frequency of this phenomenon is unknown and the relationship between skin color and blood carotenoid level is controversial. Frequently the suspicion of diabetes arising from inspection of the skin color is in fact confirmed by the usual laboratory tests. As it is known that increased intake of carotenoid-rich fruit and vegetables leads to the yellowish-red skin discoloration, in the present case the patient was a known diabetic with uncontrolled blood sugar and showed the yellowish skin discoloration in spite of not taking any carotenoid-rich foods. After controlling his blood sugar level the patient showed improvement in his skin discoloration.

Key words: Carotenemia, diabetes mellitus, xanthosis diabetic

Introduction

Carotinemia is a condition to which von Noorden, in 1904, gave the name "xanthosis diabetica."[1] This discoloration was noted particularly in the naso-labial folds, on the palms of the hands and the soles of the feet. Carotenemia with its yellowish-red tint is found in diabetes. The frequency of this phenomenon is unknown and the relationship between skin color and blood carotenoid level is controversial. Frequently the suspicion of diabetes arising from inspection of the skin color is in fact confirmed by the usual laboratory tests.[2]

Carotenemia is a clinical condition characterized by yellow pigmentation of the skin (xanthoderma) and increased beta-carotene levels in the blood. In most cases, the condition follows prolonged and excessive consumption of carotene-rich foods, such as carrots, squash, and sweet potatoes.[3]

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Many individuals with diabetes have elevated serum carotene levels, but only 10% of these individuals exhibit yellowing of the skin. Carotenemia may be related to restricted dietary habits, hyperlipidemia, or a deficiency in the conversion of carotene into vitamin A by the liver.[4]

Case Report

A 41-year-old male presented to the outpatient department with a 1-month history of yellow discoloration of both palms and soles [Figure 1]. He was a known case of diabetes for the last 18 years on oral hypoglycemic agents. On examination he was normotensive and his conjunctiva was not icteric. His lab investigation reveals FBS 187 mg/dl; glycocylated hemoglobin value was 10.6%. The serum bilirubin and thyroid function tests were within normal limits. He did not report ingesting excessive amounts of carotene-rich fruits or vegetables, such as carrots, squash, and green beans. The patient was treated with insulin and metformin medication, and followed up after 2 months. The yellow discoloration of his palms and soles has improved after 2 months [Figure 2].

Discussion

Yellow discoloration of the skin may be associated with carotenemia, hypothyroidism, liver disease, and renal

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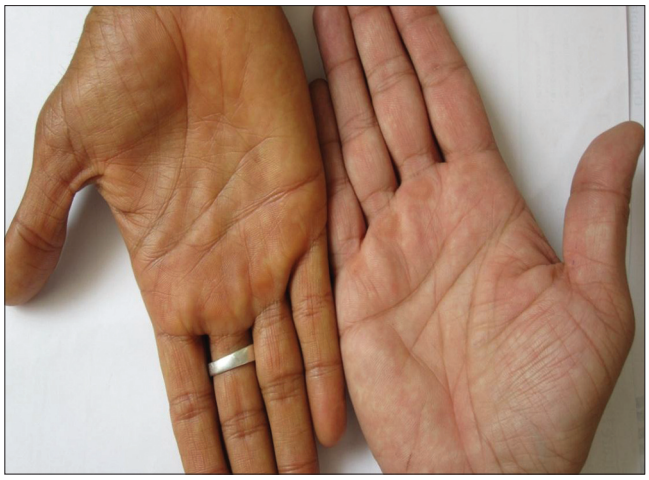

Figure 1: Yellow discoloration of left palm in comparison with the right palm of examiner on first visit

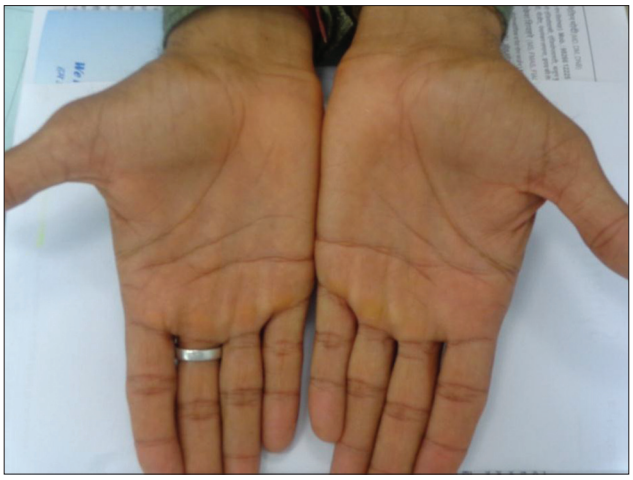

Figure 2: Normal palms after 2 months of insulin therapy

disease. It is an uncommon finding in patients with diabetes. Traditionally, it is considered to be related to carotenemia, but it may also be associated with end-products of advanced glycation.

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